RF Exposure Evaluation Declaration

FCC ID:	2ATY4-C4220200
APPLICANT:	SHANGHAI UNISPLENDOR LELIAN INTERNET OF THINGS TECHNOLOGY CO.,LTD.
Application Type:	Certification
Product:	Smart metering socket
Model No.:	C4220200
FCC Classification:	Digital Transmission System (DTS)
Test Procedure(s):	KDB 447498 D01v06
Test Date:	November 28, 2019

Reviewed By: (Kevin Guo)

Approved By: (Robin Wu)

Revision History

Report No.	Version	Description	Issue Date	Note
1911WSU008-U2	Rev. 01	Initial report	12-03-2019	Valid

1. PRODUCT INFORMATION

1.1. Equipment Description

Product Name:	Smart metering socket
Model No.:	C4220200
Frequency Range:	802.15.4: 2405 ~ 2475 MHz
Type of Modulation:	O-QPSK
Date Rate:	250kbps
Type of Antenna:	PIFA Antenna
Antenna Gain:	2dBi

2. RF Exposure Evaluation

2.1. Limits

According to FCC 1.1310: The criteria listed in the following table shall be used to evaluate the environment impact of human exposure to radio frequency (RF) radiation as specified in 1.1307(b)

LIMITS FOR MAXIMUM PERMISSIBLE EXPOSURE (MPE)

Frequency Range (MHz)	Electric Field Strength (V/m)	Magnetic Field Strength (A/m)	Power Density (mW/cm^2)	Average Time (Minutes)
(A) Limits for Occupational/ Control Exposures				
300-1500	--	--	f/300	6
1500-100,000	--	--	5	6
(B) Limits for General Population/ Uncontrolled Exposures				
300-1500	--	--	f/1500	6
1500-100,000	--	--	1	30

f= Frequency in MHz

Calculation Formula: $Pd = (Pout*G)/(4*pi*r^2)$

Where
Pd = power density in mW/cm^2
Pout = output power to antenna in mW
G = gain of antenna in linear scale
Pi = 3.1416
r = distance between observation point and center of the radiator in cm

Pd is the limit of MPE, $1mW/cm^2$. If we know the maximum gain of the antenna and the total power input to the antenna, through the calculation, we will know the distance r where the MPE limit is reached.

2.2. Test Result of RF Exposure Evaluation

Product	Smart metering socket
Test Item	RF Exposure Evaluation

Test Mode	Frequency Band (MHz)	Maximum EIRP (dBm)	Power Density at R = 20 cm (mW/cm^2)	Limit (mW/cm^2)
802.15.4	2405 ~ 2475	17.36	0.0108	1

CONCULISON:

The max Power Density at R (20 cm) = 0.0108mW/cm^2 < 1 mW/cm^2 for this device.

Therefore, the Min Safety Distance is 20cm.

The End

Appendix A - Test Setup Photograph

Refer to “1911WSU008-UT” file.

Appendix B - EUT Photograph

Refer to “1911WSU008-UE” file.